

**Advice to the Minister for the Environment, Heritage and the Arts
from the Threatened Species Scientific Committee (the Committee)
on Amendment to the list of Threatened Species
under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

1. Scientific name (common name)

Notelaea ipsviciensis (Cooneana Olive)

2. Reason for Conservation Assessment by the Committee

This advice follows assessment of information provided by a public nomination to list the recently described and named Cooneana Olive as **critically endangered**. This is the Committee's first consideration of the species under the EPBC Act.

3. Summary of Conclusion

The Committee judges that the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

The Committee judges that the species has been demonstrated to have met sufficient elements of Criterion 3 to make it **eligible** for listing as **critically endangered**.

The Committee judges that the species has been demonstrated to have met sufficient elements of Criterion 4 to make it **eligible** for listing as **critically endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

4. Taxonomy

The species is accepted as *Notelaea ipsviciensis* (Cooneana Olive). There are no disputes about the taxonomy of the species (Harris, 2004).

5. Description

The Cooneana Olive is a small multi-stemmed evergreen shrub growing up to 1–2 m in height. It is slow-growing, forming large underground lignotubers. It produces very small cream-yellow flowers and its fruit is small (up to 10 mm wide), purple and fleshy, surrounding one seed.

Surviving Cooneana Olive specimens grow as an understory plant in degraded, eucalypt-dominated dry sclerophyll communities situated on poor, sandstone-based soils. The species is endemic to the Ipswich area in south-east Queensland (Lock et al., 2004; Beyleveld, 2006, 2007).

6. National Context

The Cooneana Olive was only recently described and named (Harris, 2004) and is not currently listed under any state or Commonwealth legislation. The species is known from only three closely clustered sub-populations in the Ipswich area of southern Queensland. The extent of occurrence is less than 2 km², and total number of specimens is 17, having declined from 19 specimens at the time of nomination (March, 2007), with one specimen destroyed by fire and another levelled by earthmoving machinery during road construction (Bird, 2007, pers. comm.). There is little historical information on the species. The first two specimens, discovered in 1976 in the grounds of the Cooneana Homestead, were destroyed by dumping of mining debris before they could be studied/described further, and the species was subsequently presumed extinct until rediscovery in the 1980s.

7. Relevant Biology / Ecology

The Cooneana Olive is a member of the Oleaceae family. It is a very slow growing plant, and presumably long-lived, with resilience to occasional burning and vegetation loss due to its lignotuber. Generation length is not known. No recruitment has been recorded since the species' rediscovery, and all specimens are mature. Seed recruitment therefore appears to be low, although it is not known if this is due to sporadic flowering, limiting pollinators or limiting seed dispersers. Native bees are suspected to be the pollinator species. No fauna have been observed eating/dispersing fruits. A germination rate of 60–80% has been recorded with propagation trials. Cuttings do not take, so this is not a viable propagation technique (Lock et al., 2004; Beyleveld, 2007).

8. Description of Threats

Due to its relatively recent discovery, the full range of causes for this species' historical decline are not known. However, gross land disturbance due to open cut coal mining and clay extraction, particularly the dumping of the rock and soil overlying coal seams ("overburden dumping"), has been a major driver of decline.

Exotic weed invasion, inappropriate fire regimes (chiefly excessive frequency of fire), road building and general urbanisation of the region are considered the other drivers of decline. Pathogens including *Phytophthora cinnamomi* are a potential threat.

With the low number of individuals the species may suffer from inbreeding depression (Lock et al., 2004; Beyleveld, 2006, 2007). The species co-occurs with Lloyd's Olive (*Notelaea lloydii*) and Netted Mock-Olive (*Notelaea ovata*). The risk of hybridisation between the three species is unclear.

9. Public Consultation

The nomination was made available for public exhibition and comment for 31 business days (2 October 2007 to 13 November 2007). No public comment was received.

10. How judged by the Committee in relation to the criteria of the EPBC Act and Regulations

The Committee judges that the species is **eligible** for listing as **critically endangered** under the EPBC Act. The assessment against the criteria is as follows:

Criterion 1: It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers

There are no historical estimates of population size for the Cooneana Olive. There are, however, only 17 known living specimens (a reduction from 19 in March 2007). The extent of occurrence of these specimens is $<2 \text{ km}^2$, and again, no historical estimate exists. There are, therefore, insufficient quantitative data available to judge that the species has undergone a reduction in numbers.

The region in which the species survives has a history of mining, land clearing and land degradation since European settlement, which suggests that both the species numbers and distribution have reduced. Therefore, the Committee judges that the species is suspected to have undergone a reduction in numbers.

Due to the lack of historical estimates of population size and distribution however, there are insufficient data to judge whether the reduction has been very severe, severe or substantial. Therefore, the species has not been demonstrated to have met each of the required elements of Criterion 1, and is **not eligible** for listing in any category under this criterion.

Criterion 2: Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited

The Cooneana Olive is found in three sub-populations at a single site of less than $<2 \text{ km}^2$ (representing the extent of occurrence of the species). There are no historical estimates of the species geographic distribution, however the Committee judges that the current geographic distribution is very restricted, particularly given the species' slow growth rate and low seed recruitment in the wild.

The species appears to be susceptible to a range of threats (Section 8). Any of these, but extreme wildfire events in particular, could potentially extirpate all remaining individuals, due to all known individuals occurring at a single site of $<2 \text{ km}^2$. The Committee judges that the species' very restricted geographic distribution is precarious for the survival of the species.

Therefore, the species has been demonstrated to have met the relevant elements of Criterion 2 and is **eligible** for listing as **critically endangered**.

Criterion 3: The estimated total number of mature individuals is limited to a particular degree; and either

- (a) evidence suggests that the number will continue to decline at a particular rate; or**
- (b) the number is likely to continue to decline and its geographic distribution is precarious for its survival**

The total number of mature individuals is 17 which, for a slow-growing plant with low seed recruitment, the Committee considers to be very low.

Two individuals were reportedly destroyed by fire and road construction during 2007 (Bird, 2007, pers. comm.), suggesting that the number of individuals will continue to decline. There are insufficient data, however, to judge whether the rate of decline would be very high, high or substantial.

As outlined at Criterion 2, the Committee judges that the species' geographic distribution is precarious for the survival of the species.

The Committee considers that the estimated total number of mature individuals of the species is very low, is likely to continue to decline, and that the species' geographic distribution is precarious for its survival. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 3 to make it **eligible** for listing as **critically endangered**.

Criterion 4: The estimated total number of mature individuals is extremely low, very low or low

The species is known from 17 mature individuals, all located at a single site of <2 km². Given the threats to the species, its very restricted geographic distribution, its slow growth rate and low seed recruitment, the Committee considers the total number of mature individuals to be extremely low. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 4 to make it **eligible** for listing as **critically endangered**.

Criterion 5: Probability of extinction in the wild that is at least:

- a) 50% in the immediate future; or**
- b) 20% in the near future; or**
- c) 10% in the medium-term future.**

There are insufficient data available to estimate a probability of extinction of the species in the wild over a relevant timeframe. Therefore, as the species has not been demonstrated to have met sufficient elements of Criterion 5, it is **not eligible** for listing in any category under this criterion.

11. CONCLUSION

Conservation Status

Notelaea ipsviciensis (Cooneana Olive) was nominated for inclusion in the list of threatened species referred to in section 178 of the EPBC Act. The nominator suggested listing in the **critically endangered** category of the list.

The Committee judges that the species has a very restricted geographic distribution, which is precarious for the survival of the species due to its single location, deleterious land use and inappropriate fire regimes. Therefore, the species has been demonstrated to have met sufficient elements of **Criterion 2** to make it **eligible** for listing as **critically endangered**.

The Committee judges that the total number of mature individuals of the species is very low, that evidence suggests the number is likely to continue to decline and that the species' geographic distribution is precarious for its survival. Therefore, the species has been demonstrated to have met sufficient elements of **Criterion 3** to make it **eligible** for listing as **critically endangered**.

The Committee judges that the estimated total number of mature individuals is extremely low. Therefore, the species has been demonstrated to have met sufficient elements of **Criterion 4** to make it eligible for listing as **critically endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

Recovery Plan

Local enthusiasts, the community organisation Greening Australia, the Queensland Department of Main Roads and the Queensland Herbarium are undertaking activities to conserve the species. The species appears to have a biology that makes it amenable to propagation from seeding fruit, including a high viability rate for propagated seeds, and there are no cross-jurisdictional or cross-border issues which a recovery plan could assist with. The Committee recommends, therefore, that there should not be a recovery plan for the species.

12. Recommendations

- (i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the **critically endangered** category:
Notelaea ipsviciensis (Cooneana Olive)
- (ii) The Committee recommends that there should not be a recovery plan for this species.

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Chair
Threatened Species Scientific Committee

13. References cited in the advice

Beyleveld, L. (2006). The Cooneana Olive: an Australian plant on the brink of extinction. Presented paper, Veg Futures Conference, March 2006.

Beyleveld, L. (2007). Cooneana Olive (*Notelaea ipsviciensis*) — An independent conservation project for one of Australia's most endangered plants. Greening Australia Queensland and Queensland Department of Main Roads.

Bird, L. (2007). Personal communication. Local amateur botanist.

Harris, W. (2004). *Notelaea ipsviciensis* (Oleaceae), a new species from south-east Queensland. *Austrobaileya* **6**: 973–976.

Lock, K., Stibbard, J., Cheney, A., Benson, G. and Forsyth, B. (2004). Recovery Plan for *Notelaea ipsviciensis* (Cooneana Olive). University of Queensland.